



High-end Power Semiconductor Manufacturer

ZP12000-WELDING DIODE**200V-400 V****WELDING DIODE****Features:**

- . All diffused structure
- . High current density
- . Very low forward voltage drop
- . Ceramic housing hermetic package
- . Ultra-low thermal resistance

**ELECTRICAL CHARACTERISTICS AND RATINGS****Reverse Blocking**

Device Type	V_{RRM} (1)	V_{RSM} (1)
ZP12000 -02	200	300
ZP12000 -04	400	450

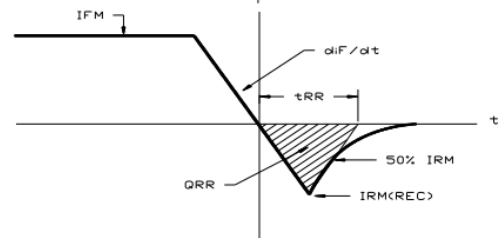
 V_{RRM} = Repetitive peak reverse voltage V_{RSM} = Non repetitive peak reverse voltage (2)

Repetitive peak reverse leakage current	I_{RRM}	15 mA 50 mA (3)
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Notes:

All ratings are specified for $T_j = 25^\circ\text{C}$, unless otherwise stated(1) Sine half wave, $f=50\text{Hz}$, $T_j = -40$ to $+170^\circ\text{C}$.(2) Sine half wave, Pulse width 10 msec. $T_j = -40$ to $+170^\circ\text{C}$.(3) Maximum value for $T_j = 170^\circ\text{C}$.

(4) See parameter definition below :



REVERSE RECOVERY CHARACTERISTIC

Conducting - on state

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Average forward current	$I_{F(AV)}$		12000		A	Sinewave 180° , $T_c = 85^\circ\text{C}$
RMS forward current	I_{FRMS}		18800		A	
Peak one cycle surge (non repetitive) current	I_{FSM}		85000		A	Pulse width 10 msec, sinusoidal wave-shape, 180° conduction, $T_j = 170^\circ\text{C}$
I square t	I^2t		36100		KA^2s	Pulse width 10 msec, sinusoidal wave-shape, $T_j = 170^\circ\text{C}$
Peak forward voltage	V_{FM}		1.00		V	$I_{FM} = 5000\text{A}$; 25°C
Threshold voltage	V_{TO}		0.74		V	$T_j = 170^\circ\text{C}$
Slope resistance	r_T		0.019		$\text{m}\Omega$	$T_j = 170^\circ\text{C}$
Reverse Recovery Current (4)	$I_{RM(REC)}$				A	$I_{FM} = 1000\text{A}$; $dI_F/dt = 10\text{A}/\mu\text{s}$; T_{jmax}
Reverse Recovery Charge (4)	Q_{rr}				μC	$I_{FM} = 1000\text{A}$; $dI_F/dt = 10\text{A}/\mu\text{s}$; T_{jmax}
Reverse Recovery Time (4)	t_{rr}				μs	$I_{FM} = 1000\text{A}$; $dI_F/dt = 10\text{A}/\mu\text{s}$; T_{jmax}

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Operating temperature	T_j	-40	+170		$^{\circ}\text{C}$	
Storage temperature	T_{stg}	-40	+170		$^{\circ}\text{C}$	
Thermal resistance - junction to case	$R_{\Theta(j-c)}$		0.006		$^{\circ}\text{C/W}$	Double sided cooled
Thermal resistance - junction to case	$R_{\Theta(j-c)}$		0.012		$^{\circ}\text{C/W}$	Double sided cooled
Creepage distance	D_s		4		mm	
Air breakdown distance	D_a		4		mm	
Mounting force	F	25	30	35	kN	
Weight	W			205	g	

* Mounting surfaces smooth, flat and greaseless

Outline

